

REMARKS

Each rejection is addressed separately below. In view of the remarks presented below, Applicants respectfully request reconsideration of the merits of this application.

§103 REJECTIONS

Claims 24-28 and 32-35 have been rejected as being obvious over Cook et al. (US6213930), in view of Draber et al. (J. Immun. Meth., 181:37-43, 1995) and Andya et al. (Pharm. Res., 16:350-358, 1999) with Freeman (US6746698). Applicants respectfully submit that this rejection is improper as none of the cited references, either alone or in combination, teach or suggest all the elements of the pending claims.

Claim 24 recites a method for producing a feed containing heat-stabilized egg antibodies in which an egg white, an egg yolk containing an egg antibody and at least one saccharide are mixed together to form a suspension, spray-drying the suspension to form an egg powder, and heating the powder to an antigen-binding-activity-destroying temperature of 70°C. The heart of this invention is the discovery by Applicants that the combination of an egg white, an egg yolk containing an egg antibody *and at least one saccharide* retains more antigen-binding activity than an egg antibody prepared without the at least one saccharide. The cited references, taken alone or in combination, do not teach nor do they suggest the production of feeds containing an egg suspension comprising egg antibodies *and at least one saccharide* where the egg antibody retains more antigen-binding activity after exposure to a temperature of at least 70°C than an egg suspension without the at least one saccharide.

For instance, Cook teaches a method for enhancing body growth or feed efficiency in animals using anti-phospholipase A2. Cook does not teach the production of feeds containing an egg white, an egg yolk containing an egg antibody and at least one saccharide. Cook also does not teach that processing a suspension comprising an egg white, an egg yolk containing an egg antibody and at least one saccharide by exposing the suspension to an antigen-binding temperature of at least 70°C will result in a heat-stabilized egg antibody that retains more antigen-binding activity after exposure to a temperature of at least 70°C than an egg suspension without the at least one saccharide. As the Examiner concedes, Cook does not teach or suggest the use of trehalose and does not teach a processing step at a temperature of at least 70°C. Draber, Andya and/or Freeman do not correct the

deficiencies of Cook.

For instance, Draber teaches mixing a mouse monoclonal antibody with a saccharide (trehalose) to increase stability during freeze-drying and prolonged storage at elevated temperatures (page 38, the paragraph bridging the left and right columns). Draber showed that the activity of the antibody is protected in the dried mixture when stored at 50°C for 14 days (Fig. 3 and related text). However, Draber does not teach the saccharide is necessary to preserve the antigen-binding activity of the antibody, nor does Draber teach or suggest that the saccharide will preserve the antigen-binding activity of an egg antibody upon exposure to an antigen-binding activity-destroying temperature of at least 70°C. Further, Draber teaches that there is a wide range of success among saccharides. See, for instance, page 41, last paragraph, where Draber teaches that of the multiple saccharides tested, only trehalose was effective at improving the stability of mouse antibodies at freezing temperatures. Draber provides no guidance regarding the potential feasibility of different saccharides at higher temperatures. In short, Draber, either alone or in combination with Cook, does not render the present invention obvious.

Andya teaches mixing a human monoclonal antibody with trehalose to evaluate the best formulation to maximize protein stability and aerosol performance in a spray-dried powder (p. 352, right column, lines 11-14). Andya does not teach or suggest that one can produce a feed containing a heat-stabilized egg antibody by mixing an egg white, an egg yolk containing an egg antibody and at least one saccharide. Andya further does not teach or suggest that combining the saccharide with the egg yolk will result in an egg antibody that will lose less antigen-binding activity upon exposure to an antigen-binding activity-destroying temperature of at least 70°C than an egg antibody prepared without the saccharide. In short, Andya, either alone or in combination with Cook and/or Draber, does not render the present invention obvious.

Freeman is generally directed to animal feed, and includes a general statement about the formation of pellets for animal feed in pellet mills which includes a temperature ranging from about 120°F to about 250°F (column 4, 3rd paragraph; 70°C is about 158°F). However, Freeman is not directed to producing a feed containing heat-stabilized egg antibodies. Rather, it is concerned with providing an animal feed binder including hemicellulose to provide intra-particle cohesion. While generally related to animal feed, Freeman is not concerned with providing heat-stabilized egg antibodies of any kind. The paragraph cited by the Examiner only discusses general pelletizing

processes for making animal feed. The rest of Freeman does not mention a processing step including exposing an egg powder to an antigen-binding-activity-destroying temperature of at least 70°C. In addition, the range provided by Freeman is both well below and well above the particular antigen-binding- activity-destroying temperature of at least 70°C as recited in the present claims. Accordingly, Applicants respectfully submit that Freeman does not correct the deficiencies of Cook, Draper and Andya. In short, Freeman, either alone or in combination with Cook and/or Draber and/or Andya, does not render the present invention obvious.

In addition, Applicants note that the Office raised an almost identical rejection of these claims in an earlier rejection mailed September 26, 2007. In particular, Applicants' claims 24-26 and 31-35 were rejected as obvious over the combined teachings of Cook, Draber and Andya. Applicants successfully traversed this rejection in the response mailed March 26, 2008. The Office subsequently withdrew the rejection in the action mailed October 6, 2008. The argument used to overcome the previous rejection is incorporated herein and Applicants further that discussion to vigorously argue that Freeman, as described in the preceding paragraph, does not cure the deficiencies of the combined teachings of Cook, Draber and Andya.

In view of the above discussion, Applicants respectfully request reconsideration of the obviousness rejection and withdrawal of same.

SUMMARY

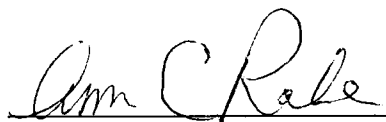
Having addressed each rejection raised by the Examiner, the claims at issue are believed to be in condition for allowance and a Notice of Allowance is respectfully requested. Should any issues remain outstanding, the Examiner is invited to contact the undersigned at the telephone number appearing below if such would advance the prosecution of this application.

A petition for a three-month extension of time accompanies this response so that the response will be deemed to have been timely filed. If any other extension of time is required in this or any subsequent response, please consider this to be a petition for the appropriate extension and a request to charge the petition fee to the Deposit Account No. 17-0055.

No other fee is believed to be due in connection with this response. However, if any fee is due in this or any subsequent response, please charge the fee to the same Deposit Account No. 17-0055.

Respectfully submitted,

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Ann E. Rabe, Reg. No. 56,697
Quarles & Brady LLP
411 East Wisconsin Avenue
Milwaukee, Wisconsin 53202
Tel. No. (414) 277-5613